

CLAIM AMENDMENTS AND STATUS

1-20. (cancelled)

21. (new) A combination in line plastic spiral coil forming and binding machine comprising:

a coil forming machine for heating, forming and cutting discrete segments of plastic binding coils, said discrete segments being of a length required for a particular book being bound;

a binding machine for binding said discrete segments into holes of the book being bound; and,

a transfer mechanism for transferring said segments of heated binding coils from said coil forming machine to said binding machine, said transfer mechanism being selected to provide slow cooling of said coil segments and a sufficient duration of time between when said coils segments are cut and said coil segments arrive at said binding machine to provide adequate cooling of a range of sizes and gauges of binding coil segments for proper processing by said binding machine.

22. (new) The combination plastic spiral coil forming and binding machine as in claim 21 wherein said transfer mechanism includes a linkage cooling conveyor.

23. (new) The combination plastic spiral coil forming and binding machine as in claim 22 wherein said cooling conveyor further includes a drive mechanism for intermittently advancing said binding coils toward said binding machine.

24. (new) The combination plastic spiral coil forming and binding machine as in claim 21 wherein said transfer mechanism further includes a mechanism for intermittently advancing said binding coils toward said binding machine.

25. (new) The combination plastic spiral coil forming and binding machine as in claim 24 wherein said transfer mechanism includes a linkage cooling conveyor for conveying plastic coils comprising a wide belt supported by a stationary horizontal platen, wherein said wide belt has a rigid chain construction with a plurality of fins attached thereto; a drive pulley communicating with and advancing said wide belt; a plurality of fins form compartments, wherein said compartments allow placement of plastic coils therein; and wherein said mechanism for intermittently advancing said coils comprises a gear motor electrically connected to said drive pulley; and, a motor speed controller electrically connected to said gear motor, wherein said motor speed controller causes said drive pulley to intermittently rotate thereby intermittently advancing said plastic coil on said belt towards a binding machine.

26. (new) The combination plastic spiral coil forming and binding machine as in claim 21 wherein said binding machine interacts with said plastic spiral forming machine at compatible speeds to each other, said coil forming machine having a means for taking plastic thread from a spool, a heating chamber for preheating said plastic thread, an advancement means advancing and then winding said plastic thread on a mandrel, a discharge element discharging said heated plastic thread in free air as a heated spiral coil, a cutter cutting said heated spiral coil being cut to a predetermined size as a heated coil, said heated coil, being conveyed to said transfer

mechanism, said transfer mechanism moving said coil intermittently and allowing said coil to cool; and, said cooled coil being transported by said transfer mechanism to a receiving conveyor of said binding machine.

27. (new) The combination plastic spiral coil forming and binding machine as in claim 22 further comprising a drive motor moving said linkage cooling conveyor.

28. (new) The combination plastic spiral coil forming and binding machine as in claim 27 further comprising a sensor detecting an end of said plastic spiral, said sensor being adjustable to a required spiral length as dictated by a book being bound by said binding machine, said sensor initiating cutting of said hot spiral by a cutter by a signal amplified by a driver, a signal pulse from said sensor also initiating an index cycle of said motor through a controller and a logic gate, said motor being stopped when a next vane is detected in a predetermined position by a detector.

29. (new) The combination plastic spiral coil forming and binding machine as in claim 28 wherein said linkage cooling conveyor includes a plurality of compartments for said spiral coils and said machine further includes a switch for indexing advancing movement of said linkage cooling conveyor incrementally to sequentially and discretely empty said compartments of said cooled spiral coils therefrom.

30. (new) The combination plastic spiral coil forming and binding machine as in claim 21 wherein said coil forming machine and said binding machine are separate machines that operate independently of one another.

31. (new) A method for forming a plastic spiral coil and binding the same into holes of a book to bound comprising the steps of:

heating and forming a plastic binding coil in a coil forming machine;

cutting discrete segments from said heated binding coil into a length required for a particular book being bound;

transferring said coils segments to a binding machine for binding said discrete segments into holes of the book being bound so that an elapsed time between when said coils segments are cut and said coil segments arrive at said binding machine is sufficient to allow said coils segments to cool slowly and adequately for proper processing by said binding machine; and

inserting each said cooled coil segment into a book to be bound in said binding machine.

32. (new) The method of claim 31 wherein said coils are advanced toward said binding machine in incremental steps.

33. (new) The method of claim 31 wherein said coils are transferred at least in part by a linkage cooling conveyor.

34. (new) The method of claim 33 wherein said cooling conveyor intermittently advances said binding coils toward said binding machine.

35. (new) The method of claim 34 wherein a drive pulley communicating with and advancing said cooling conveyor is driven by a gear motor; and, a motor speed controller

electrically connected to said gear motor causes said drive pulley to intermittently rotate thereby intermittently advancing said plastic coil towards said binding machine.

36. (new) The method of claim 31 wherein said binding machine interacts with said plastic spiral forming machine at compatible speeds to each other, wherein said coil forming machine carries out the steps of taking plastic thread from a spool, preheating said plastic thread in a heating chamber, advancing and then winding said plastic thread on a mandrel, discharging said heated plastic thread in free air as a heated spiral coil by cutting said heated plastic thread to a predetermined size as a heated coil and transferring said heated coil to said transfer mechanism, and said transfer mechanism carries out the steps of moving said coil intermittently, allowing said coil to cool and transporting said cooled coil to a receiving conveyor of said binding machine.

37. (new) The combination plastic spiral coil forming and binding machine as in claim 36 further comprising detecting an end of said plastic spiral with a sensor, said sensor being adjustable to a required spiral length as dictated by a book being bound by said binding machine; initiating cutting of said hot spiral by a cutter in response to a signal generated by said sensor; initiating an index cycle of said motor through a controller and a logic gate also in response to a signal generated by said sensor; and stopping said motor when a next vane is detected in a predetermined position by a detector.

38. (new) The method of claim 37 wherein said transfer mechanism comprises a linkage cooling conveyor which includes a plurality of compartments for said spiral coils and said

method further comprises the step of advancing movement of said linkage cooling conveyor incrementally to sequentially and discretely empty said compartments of said cooled spiral coils therefrom.